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FINITE ELEMENT ANALYSIS OF PROFILED STEEL SHEETING DRY BOARD (PSSDB) SYSTEM AS WALLING UNIT WITH WINDOW AND DOOR OPENING

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I hereby declare that this report has not been submitted, either in the same or different form, to this or any other University for degree, and except where reference is made to this work of others, it is believed to be original.

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ABSTRACT

The Profiled Steel Sheeting Dry Board (PSSDB) system is a kind of composite structure that can be used as load bearing component for a building. Profiled steel sheeting connected to dry board using self-drilling or self-tapping screw to form a composite section forms this system.

This study reviews the Profiled Steel Sheeting Dry Board (PSSDB) system as wall panel, which has door and window opening. The material of profiled steel sheet is PEVA 45 and the dry board is CEMBOARD. The present work is theoretical in nature and attention is focused on the behavior of the PSSDB system due to the existence of window and door opening and done by comparing the PSSDB with single window opening and PSSDB with single door opening.

An analysis using LUSAS finite element computer package had been undertaken. It is found from the study that the PSSDB panel has a good load bearing capacity as wall unit. The existence of window and door opening in the PSSDB wall gave lower ultimate load capacity when compared to neither PSSDB with single door opening nor PSSDB with single window opening.

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